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A Community Corporation Approach to Management of Marine Fisheries: With Some Potential Applications to Hawaii

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Introduction

The basic premise of this paper is that in a modern capitalist society, the corporate form (whether for-profit or nonprofit) is a logical and perhaps attractive possibility for community management of common-use resources. The corporate form may have particular advantages for long-term efficient conservation of a commercially utilized natural resource asset, such as most marine fisheries (Townsend, 1995). But it may also be applicable for small-scale commercial, recreational, and subsistence uses. Granted well-designed allocation of initial shares, including the potential for restrictions on their monetization, the community corporation can also foster several attractive political and sociological values.

Critics of neoclassical economics tend to underestimate the heuristic power of its explanatory pedagogy. Certainly this is true in fisheries, where an overarching bioeconomic framework (e.g., Gordon, 1954), combined with the idea of the "tragedy of the commons" (Hardin, 1968), shapes fisheries policy analysis. This perspective can be summed up in the idea of "optimization" (*maximum economic yield*) and the application of social benefit–cost assessment to fisheries regulation. Both are premised on the foundations of microeconomic theory, particularly individual maximization

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by well-informed economic agents (e.g., fishing vessel owners), and the social optimality of the market in equilibrium. These coexist uneasily with natural variabilities of population dynamics in fisheries and the incomplete information upon which fishers must act.

Economists were long unsuccessful in their efforts to import the concept of maximum economic yield into the dominant biological paradigm of fisheries management (Anderson, 1987). Their promotion of economic efficiency as legitimation for privatization of fisheries allocation (i.e., who gets the fish) has been more successful. The idea of *individual transferable quotas* (ITQs) has been the vehicle for this success, with Australia and New Zealand being major sources of policy leadership (Annala, 1996).[1] The ITQ approach is consistent with the new social structure of regulation (described next), but fails to resolve further problems of regulatory discordance.

Social Structure of Regulation

A central problem in natural resource management involves a gap between the *public trust* (e.g., long-term conservation of fishery stocks and their ecological environment) and the immediate interests of those utilizing a fishery. The tension between private and public interests leads to conflicts over decisions concerning the use and conservation of natural resources. Regulatory government evolves from these conflicts over natural resource management, with the state mediating relationships between capital and nature (O'Connor, 1988, p. 23).

However, the regulatory regime that constrained natural resource use over the past twenty to thirty years is rapidly changing. Eisner (1994) summarizes the earlier situation as *societal regime* based on the conviction that government had to accept responsibility for preventing or minimizing hazards to human health and the environment. Government extended its regulatory authority over many decisions previously reserved for business. That *regime* required a highly professionalized, complex governmental structure.

This regulatory regime was initiated during the apogee of the U.S. economic growth following World War II. The recessions of the 1970s and 1980s weakened the fiscal resources available to government and increased competition in the private sector. There was also increased international competitiveness, particularly from Europe and Japan but also from the newly industrializing countries. Together these factors generated a strong incentive to reduce the social overhead of U.S. business. The *efficiency regime* was initiated in which market mechanisms are viewed as appropriate for dealing with negative externalities (e.g., pollution permits) and where the general level of economic competitiveness is more important than (marginal) improvements in the environment (Eisner, 1994).

Community and environmental groups have been of several minds about hese regulatory changes. Some accept that many government-based approaches to regulation and resource management have been inefficient and frequently have failed.[2] Nationally, the more conservative wing of the environmental movement favors market-based approaches to natural resource regulation.[3] Many communities and some environmental groups are sympathetic to the plight of small business bearing the costs of adjustment to government regulation in an increasingly competitive marketplace. Yet many, if not all, conservation groups also believe that only government can guarantee resource conservation and environmental protection. Hence, a community corporation approach to natural resource management may meet multiple social objectives.

Fishery Management in the United States

Fishery management policy in the United States occurs largely within a constricted world of localized politics, a specialized bureaucracy, and a relatively small industry. Much wider political and economic forces influence the choice of regulatory options and constrain those compatible with a market-based economic system.

Two apparently contradictory forces drove U.S. fisheries management policy for twenty-five years following World War II: (1) the conservationist natural science perspective of professional fisheries biologists (who dominate the public policy technocracy) and (2) the private property prerogatives of commercial fish harvesters and processors. This conjunction failed to meet the interests of small-scale commercial, recreational, subsistence, and indigenous fishers. The oft-competing interests of environmental organizations and natural-resource-intensive commercial development (e.g., fishery development, water supply, hydroelectric) were likewise neglected.

The Magnuson Fishery Conservation and Management Act of 1976 (Magnuson Act) broadened federal government mediation of fisheries. This asserted federal government control over marine fisheries within the 200-mile exclusive economic zone. It also initiated a process of strategic bargaining by interest groups participating in newly formed regional fishery councils. As such, the Magnuson Act represents a classic example of political pluralism within tightly constrained political boundaries and loosely structured economic and social systems (Pooley, 1993). Despite considerable expenditure of time and money, the Magnuson Act has generated little satisfaction with the fisheries management process in the United States and very little progress toward substantive procedural reform in the twenty years after the Act's implementation.

However, federal requirements for benefit-cost assessments of regulation and the basic contradiction between conservation and commercial fishery interests opened a window for economists. One proffered solution has been the initiation of a *rights-based* approach to fisheries management (Neher et

al., 1989). This assigns conservation management to government while devolving allocation decisions to the market. These market-based approaches complement the new conservative era. The "efficiency regime" is contentious but increasingly incorporated into fishery management in the United States.

Economics and Fisheries Management Alternatives

Fisheries economists soon discovered that without traditional social controls, monetized fisheries tend toward overexploitation. Economists first suggested reducing the number of fishing units (e.g., vessels) permitted to participate in a fishery (termed *limited entry*). Later they found that owners would invest in more fishing power per vessel (*capital stuffing*), defeating the conservation objective of constraining fishing capacity (Townsend, 1990).

Economists followed with the development of ITQs. Under this system the government would continue to set the conservation rules, but shares in the proposed total harvest (the quota) of a marine resource would be sold at auction or given to the previous participants (Squires et al., 1995). Those holding quota shares could then conduct their fishing operations more efficiently by modulating their fishing inputs (capital, operations, and labor) to their anticipated quota. Fisheries administrators initially liked the ITQ approach because it vested in the government the "conservation" decision (how much fish could be harvested as a whole) while leaving to the marketplace the "allocation" decision (who would get to catch it).[4]

However, at least four important limitations in the implementation of these property-rights systems have tempered initial enthusiasm. First, these systems monetize fishery access. As a result, there was exploitation of these salable rights by those with greater access to financial capital and greater finesse in handling the financial side of fisheries operations. This produced some migration of fishing rights away from local communities. Second, to avoid this, restrictions were imposed on the sale or lease of such quota shares. These restrictions increase administrative complexity (hence government costs), reduce economic efficiency, and occasionally cause hardship for individuals unable to sell their shares. Third, frequently the initial allocation of quota to individuals and to communities is controversial. Allocation of shares either creates a de facto asset from a public resource or requires current fishery participants to buy back into their own fishery. This process, and the reallocation caused by tradeable shares, can create additional fissures between user groups. Fourth, when the total quota is determined by the outside government, the separation between the governed and government continues.

Several management systems in Alaska have an interesting wrinkle: local fishing communities were vested with certain quota rights, termed CDQs (community development quotas). However, this approach maintains government control over the total allowable catch (the quota). Could more control over the entire resource management process, including determination of quota (Q), be vested in local governance? This question leads conveniently to the idea of corporate, and community, management of fisheries.

Corporate Management

Townsend (1995) and Townsend and Pooley (1995b) suggest "distributed governance" in marine fisheries. This places the practical elements of rights-based management into a regulatory and governance continuum sensitive to conditions in particular communities. The existing ITQ and CDQ systems maintain government centrality in the conservation and management decision process, which continues the alienation of many users from the difficult decisions concerning regulation of natural resource uses. Alternatives include co-management, cooperative and corporate institutions holding rights to make overall management decisions within a conservation and ecological framework monitored by government. This would redirect many management functions from the government to the community, reducing regulatory alienation and increasing the level of information for fishery management decisions.

The concept behind corporate management of natural resources relates primarily to the incentive structure rather than the decision structure of the dispersed management authority. There are important differences between the incentives under cooperative and corporate governance. These differences are most pronounced when considering long-run incentives for owner-members. "The decision structure under democratic, cooperative governance generates a greater financial stake in current income and lesser financial stake in future income, as compared to the financial interests of a shareholder in a corporation" (Townsend, 1995, p. 42).

Corporate management is a business model that emphasizes financial equity in fisheries optimization. Those with a long-term interest in a fishery (which could include any of the stakeholders, including conservation groups) could bid current resource use away from those with short-term interests. Conservation of the natural resource in the short term would represent a long-term investment in that resource, to the benefit of those with a higher valuation of the future.

For an industrial fishery, this is fairly straightforward (Townsend and Pooley, 1995a). However, in multiuse fisheries, political problems deciding which elements of the community would be incorporated into these corporations, and how they would operate. And how would a corporate structure evolve, particularly in small communities where distrust of business roughly equals distrust in government? Still, reliance on government-centered institutions of old-style natural resource management is probably less viable as the economic environment and access to natural resources become more competitive.

Community Management

Efficiency is a central concern under the neoclassical fisheries economics paradigm. Recommendations toward private property rights approaches (both ITQs and corporate management) address that concern. But efficiency has its own costs, especially without compensation to those whose welfare is reduced by the new rights regime. "Co-management" alternatives based on cooperative approaches and local self-government are proposed (Pinkerton, 1994; Jentoft and McCay, 1995). However, with heterogeneous users of a common-pool resource, cooperatives may also be limited in applicability. In addition, there are operational difficulties with cooperatives which reduce their prospects for long-term conservation (Townsend, 1995). The community corporation, by combining the advantages of locality with equity, may be superior.

The basic approach for a community corporation approach to natural resource management is to identify the *stake* in regulatory decisions of participants, potential participants, and the general public. Determining these stakes is a political question with broad ramifications. Founding precepts of the community corporation must include norms of consensual accommodation and flexibility in the allocation and reallocation of resource use rights. Rights and responsibilities of the community corporation must be explicit. This type of distributed governance would probably involve a *covenant* with the central government listing separable and mutual obligations and authorities for the parties. This might include covenants concerning the long-term conservation of the resource, along with other elements of the public interest.

A community fishery resource corporation might issue shares to current fishers and other shares to remaining stakeholders in the fishery. These shares might be transferable *within* a particular interest group (e.g., within the commercial fishery sector) or between like-minded organizations within a particular interest group (e.g., between recreational fishing clubs). A neighborhood organization might hold nontransferable shares. This would preserve their voice regarding their geographical interest in the fishery (e.g., harbor use). Alternatively, all shares could be freely transferable (i.e., access shares could be purchased by anyone).

The community corporation could generate revenue by charging user fees, harvest fees, or other fees as a condition for access to the natural resource. This revenue would finance resource management activities. The community corporation would operate like any other owner of an asset, even if its ability to restrict use of the asset were limited by its governance agreement.

Community corporation decisions (e.g., on access fees, fishery regulations, etc.) would be based on voting shares and on the fiduciary responsibilities of the management board. These would not necessarily be equity shares (although this could be the case, particularly if each interest were required to purchase its initial shares from the government). To the extent that shares differed from equity (e.g., if shares were divided evenly between commercial, recreational, and community interests without an explicit tie to the value of the fishery resource itself), then some of the efficiency characteristics of equity shares would be lost and inconsistent decision-making encouraged (Easterbrook and Fischel, 1983, p. 195). In a fully monetized community corporation, residual claims (net revenues from fishing access rights) could be distributed to the shareholders or recycled into the community or the fishery resource—as determined by the shareholders and their directors.

One concern involving any kind of "distributed governance" involves the balance with the central government. Throughout the world we find problems with the vulnerability of the local community to external forces (e.g., speculative investment, environmental degradation) and to the limited resources for scientific research, monitoring, compliance, and enforcement. Frequently "institution-building" resources will be needed to ensure that the new management authority has the capability to meet the terms of its governance covenant.

Some concerns about multiuse dispersed governance relate to issues of geography and community homogeneity. Should particular geographical communities be vested with the management of natural resources in their own backyards? How can people who do not live in those geographical communities but who have utilized resources accessible through those communities be involved in the governance community? These are the familiar boundary issues raised in the fisheries co-management literature (see Hanna et al., 1995), but extending to the sociological boundaries of multiuse resources. One potential solution is "nested" co-management, where conservation and management decisions are exercised over a range of levels (Ostrom, 1995). And the "communities" themselves should not be strictly geographical but also include aspects of ancestral heritage, conservation interest, and previous participation.

Another issue has to do with the scope of authority for the governance community. If a governance community makes a discriminatory or "foolish" resource allocation, should the state or federal authority determine and protect the public interest? Would such issues be included in the basic governance covenant? The more heterogeneous the governance community, the more likely that such issues would need to be adjudicated with the civil courts, a viable alternative to the political process.

Establishing or reestablishing local authority also requires weighing the advantages of more immediate knowledge of the natural resource against the potential increase in institutional costs incurred by these new authorities. A similar weighing involves economies of scale in scientific, monitoring, and enforcement activities. Although there may be a strong argument for distributing governance, in some cases the costs may outweigh the benefits. This is not strictly an economic algebra, but the ultimate effectiveness of the new structure depends on whether it can be effective with the available fiscal and human resources.

There is no obvious choice of management structure for a community-used natural resource, particularly a fishery with heterogeneous users. What should also be obvious is that agency costs currently inherent in a government-centered approach to fisheries management can be reduced. The community corporation is one of several options, and its advantages should be weighed along with those of other co-management alternatives.

Hawaii as a Potential Application

Hawaii's ocean fisheries and related coastal and marine resources are examples of local-scale regulatory decisions within a political and economic system structured by multinational capital (Neubauer and Pooley, 1982). Fishing and related ocean industries are primarily small-scale in Hawaii's economy.[5] Even in a small state, the psychological distance between government and the governed is not trivial. The near-shore fisheries are regulated by the State of Hawaii. The off-shore fisheries are managed by the Western Pacific Regional Fishery Management Council under the Magnuson Act. Achieving consistency between federal and state regulations is a substantial political feature of Hawaii fisheries management.

In Hawaii, a community-oriented perspective toward fisheries regulation might change the terms of governance. The state and federal governments shift from reactive regulators of fishing operations to government as performance monitor. Local communities might find creative means for dealing with regulatory problems if they had the authority and incentive to make those decisions.

Unfortunately it is not clear that neighborhood, community, or voluntary organization politics are inherently any more democratic than other levels of politics. Many issues of real significance require cross-cutting authority with other neighborhoods and other jurisdictions. A mixture of community, user group, and broader governmental authority might be productive. The community corporation has many advantages in these situations. That includes both the formality of its initial structure (the initial specification of shares) and the corporation's flexibility for making agreements and contracting with other interests.

In Hawaii one could imagine vesting control over harvest of reef resources in the hands of specially constituted reef-user cooperatives based on shoreline boundaries. For harvest of near-shore fisheries, where *access* may be much more important than *efficiency* and the ocean boundaries may be too permeable to allow tighter definition of property or management rights, neighborhood boards might be responsible for controlling physical access (e.g., at boat launch ramps). We might imagine communities requiring anyone fishing in local waters—commercial, recreation, or subsistence—to participate in community meetings on resource use as a condition of access to the fishery. We could imagine that multifaceted off-shore fishing interests could be incorporated as management corporations with authority over the harvest of selected resources. We could imagine that a marine council might devise methods for geographical separation of competing marine users (fishers, boaters, etc.) to reduce at-sea conflict by setting limits on fishing access, times, or grounds in exchange for a more direct stake in the future of their ocean resources. Any of these institutions might be organized as community corporations, whether on a profit or nonprofit basis. These approaches would have to be worked out while building these institutions.

In the nonmonetized fisheries (e.g., recreational and small-scale commercial), the state and federal governments might remain as enforcement powers, backing up the social power of the community. Even in a commercial fisheries corporation, the legal framework and constitutional protections of the state and federal authorities would be available. These authorities might vest much of their formal power into locally instituted conflict-resolution approaches rather than applying formal citations and court appearances. In each of these situations, strict contractual relationships between the community authority and the government would be needed to ensure the broader public interest in conservation and equitable access for those from outside the governance community.

Conclusion

There are undoubtedly parallels between this potential application of a community corporation in fisheries and other natural resource management situations. However, marine fisheries are unique. They are one of the few remaining commercial harvests of wildlife. Their human and natural boundaries seldom coincide, and both boundaries are fluid. They coexist within overlaying uses of the ocean and its coastal regions. How an actual community corporation would operate must be developed more fully, with a particular application in mind. Relevance to more generalizable results would be better tested then.

As local fisheries throughout the United States, as in Hawaii, become increasingly urbanized and heterogeneous, it is becoming more difficult to depend on traditional community norms to manage natural resource use. Concurrently, the traditional methods of governmental fisheries regulation are increasingly less useful in balancing optimum use with long-term conservation. The future within this status quo is not appealing: fewer and fewer fishery resources for people to enjoy and from which to generate incomes and social value. Increasingly complex governmental controls on resource use or expensive centralized application of a monetized rights-based man-

agement system are additional possibilities. Adoption of community-based governance regimes is an alternate approach. Finding ways to vest authority over fisheries resources in the relevant communities is one way to rebuild "community."

NOTES

1. The idea behind ITQs is that markets for fish quota shares would optimize the individual economics of the fishery while avoiding the inefficiencies of direct biological controls, except for quota determination. See Squires et al. (1995) for a thorough discussion.
2. But see also Gregg Easterbrook's defense of liberalism and the environment ("Dept. of Disputation: Here Comes the Sun," *New Yorker*, April 10, 1995, pp. 38–43).
3. In some cases environmental groups have bought up pollution permits, reducing the amount of pollution industries in particular areas can generate and forcing dramatic changes in industrial operations. Similar approaches have been suggested for wetlands (as in the Nature Conservancy's land purchases).
4. Leasing or selling of quota shares was the means of reallocation of quota among users.
5. Fisheries and seafood marketing comprise less than 1% of Hawaii's gross state product. Even the charterboat industry is a small component of the tourism industry. Fishing, however, is a broadly based activity, with as many as 25% of Hawaii's resident households engaged in fishing during the year (Pooley, 1993).

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International Fisheries Management Institutions: Europe and the South Pacific

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Marine affairs and fisheries science rest somewhere between public policy and biology, between economics and politics, and between international and local arenas. These synergies generate powerful challenges and subtleties for managers trying to balance environmental conservation with economic growth and stability in the face of collective-action problems. The "enclosure movement" during the 1970s partitioned oceanic resources to national jurisdictions in order to avoid the tragedy of the commons. National authorities claimed the legal opportunity and responsibility to exploit the resource fully while ensuring sustainable harvesting patterns. But creating exclusive economic zones 200 miles from shore for coastal states has not yielded the economic efficiency commonly associated with partitioned resources. Where management once failed on a global scale, it now also fails on national levels.[1] National caretakers have, generally speaking, not been able to deter overfishing, overcapitalization, and the dissipation of economic rent from fisheries.

As a transboundary, fugitive resource, some fisheries have been subjected to management institutions on an international or regional level. International organizations and arrangements are uniquely positioned to govern regional fisheries. The institutional structure of international fisheries is critical to the success and failure of most fisheries. Effectiveness can be measured by looking at how each international organization has conserved the biological resources, rationalized industrial capacity, and controlled access to the fishery. *The effectiveness of each institution depends in part on certain essential design characteristics of the arrangements which translate the actions of participants into long-term, sustainable management.* Determining why some institutions are more effective than others at analyzing and managing fishery resources provides a basis for designing effective solutions to the collective-action problems associated with fisheries and other commons.

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